

Atty. Dkt. No. 200311812-1

REMARKS

This Reply is in response to the Office Action mailed on March 3, 2006 in which claims 1-40 were rejected. With his response, claims 37 and 39 are canceled; claims 1, 4-5, 8, 11, 13-14, 19 and 30-35 are amended; and claim 41 is added. Claims 1-36, 38 and 40-41 are presented for reconsideration and allowance

I. Examiner Interview Summary

On May 30th, 2006, telephonic interview was held between Examiner Koczo and Applicants attorney, Todd A. Rathe. Examiner Koczo clarified some of the rejections under 35 USC 112. Although no specific agreement was reached, Applicants wish to thank the Examiner for the opportunity to discuss the rejections.

II. Objection to the Specification

Page 2 of the Office Action notes that the specification lacks a summary of the invention. However, we also note that the Office Action does not object to the specification or require the inclusion of a brief summary. Applicants respectfully note that 37 CFR 1.77(b), cited in the Office Action, merely states that the specification "should" include the noted sections. As noted on page 2, such are merely guidelines for a preferred layout of the specification in the utility application. There is no requirement that the specification include a brief summary of the invention.

III. Objection to the Drawings

Page 3 of the Office Action objected to the drawings noting that line 7 – 7 is not shown in Figure 2 as recited on page 2, line 4. In response, Paragraph [9] of the application specification is amended to delete reference to line 7 – 7. Accordingly, Applicants respectfully request that the objections the drawings be withdrawn.

IV. Rejection of Claims 1-40 under 35 USC 112, First Paragraph

Atty. Dkt. No. 200311812-1

Pages 3 and 4 of the Office Action rejected claims 1-40 under 35 USC 112, first paragraph, as failing to comply with the enablement requirement. In particular, the Office Action asserted that "it is not clear what is the meaning of "living hinge". It is furthermore not clear what is the structure of the junction between fingers 142 and a base portion 140 which enables it to flex about axis 146. This lack of a complete description would impose an undue burden on one of ordinary skill in the art to making use the invention."

Applicants respectfully traverse the rejection of claims 1-40 under 35 USC 112, first paragraph because (1) one of ordinary skill in the art does know what the term "living hinge" means and (2) one of ordinary skill in the art would know how to configure the structure such as the structure could flex. First, those of ordinary skill in the art would clearly understand the term "living hinge" to mean the ability of a structure to flex or pivot about one or more axes. Applicants respectfully refer the Examiner's attention to the attached print out of a web page entitled "Design Tips for Rapid Injection Molding", www.protomold.co.UK which describes repeated bending or flexing of two structures and that such bending occurs along a "living hinge". As noted in the article, the phrase "living hinge" has been used since the late 1950s.

Second, the specification clearly states that the junction between fingers 142 and base portion 140 are formed from a material configured in dimension such enable each of fingers 142 to slightly pivot or flex independent of one another about axis 146. Thus, the specification clearly indicates that the junction should be formed of an appropriate material and should appropriately dimensioned to enable flexing about axis 146. One of ordinary skill in the art clearly knows how to choose a material and how to dimension a structure formed from the material such that the structure bends or flexes. Accordingly, the rejection of claims 1-40 as being not enabling should be withdrawn.

V. Rejection of Claims 1-32 and 34 under 35 USC 112, Second Paragraph

Pages 4-5 rejected claims 1-32 and 34 under 35 USC 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter of the invention.

Atty. Dkt. No. 200311812-1

A. Claims 1, 31, 32 and 34

The Office Action rejected claims 1, 31, 32 and 34 based on the assertion that the body of each claim fails recites essential structure to perform a pumping function. In particular, the objection noted that no tubes are recited in the claims.

Applicants respectfully request that the rejection of claims 1, 31, 32 and 34 be withdrawn. As noted during the Examiner Interview held on May 30, 2006, the preamble of such claims ends with the term "comprising" which is an open-ended term meaning that other elements, not specifically recited, may be part of the claimed apparatus. As also noted during the Examiner Interview, many apparatus have a functional aspect in their name, but can not perform without one or more additional components. For example, a paint roller cannot roll paint without a paint absorbing cover. A vehicle cannot transport objects without fuel. However, such apparatus are commonly claimed without reciting a cover or fuel in the claims.

Moreover, to require one to claim each and every element necessary to make an apparatus functional would have no end. For example, if one were to claim a vehicle comprising a novel engine, such a requirement also require an applicant recite a transmission, tires, ignition, fuel tank and so on. This would not end here. For the transmission to function such a requirement would further require the claim to recite each of the "essential" components of the transmission and so on and so on. In the present case, to require the claiming of a potentially replaceable consumable such as a tube would unduly limit the scope of the present application. Accordingly, Applicants request that the rejection of claims 1, 31, 32 and 34 be withdrawn.

B. Claims 1-32 and 34-38

The Office Action rejected claims 1-32 and 34-38 for omitting essential structural cooperative relationships of elements. In particular, the Office Action asserted that the "occluding surfaces" and the "occlusion fingers" are structurally disconnected from any other structure. With respect to claim 1, the Office Action asserted that there is insufficient structure in

Atty. Dkt. No. 200311812-1

that "there has to be structure which imposes a force on the occlusion finger, and therefore the spring, in order for the spring to bias the occlusion finger."

In response, claims 1, 31, 32, and the 34 are each amended to recite a structural relationship between the "occluding surfaces" and the "occlusion fingers". Claim 1 is further amended to recite that plurality of springs are "supported so as to independently resiliently bias the plurality of occlusion fingers". Accordingly, claims 1, 31, 32 and 34, as amended, overcome the rejection under 35 USC 112, second paragraph.

C. Claims 8, 19, 22; 11 and 13; 14; 30 and 35

Page 5 rejected claims 8, 19 and 22 under 35 USC 112 asserting that it is not clear what is channeled by the "channeling member". Claims 8 and 19 are amended to clarify that the channeling member is configured to channel at least tube. Claim 22 recites a "tube channeling member". The term "tube" is clearly an adjective describing what is being channeled. Accordingly, Applicants request that the rejection of such claims be withdrawn.

With respect to claims 11, 13, 14, 30 and 35, the Office Action noted a lack of antecedent basis. In response, such claims or the claims from which they depend are amended provide proper antecedent basis for such claims. Accordingly, such claims, as amended, overcome rejection under 35 USC 112, second paragraph.

VI. Rejection of Claim 35 under 35 USC 102 (b) Based upon Van Steenderen

Page 5 of the Office Action rejected Claim 35 under 35 USC 102 (b) Based upon Van Steenderen et al., US Patent 5,096,393. Claim 35, as amended, overcomes the rejection based upon Van Steenderen.

Claim 35, as amended, recites a peristaltic pump which includes a first unit having independently movable surfaces adjacent the compressible portion of each of the fluid passages

Atty. Dkt. No. 200311812-1

and a second unit into early formed as a single unitary body having biasing means for resiliently biasing the independently movable surfaces.

Van Steenderen fails to disclose or suggest a peristaltic pump having a second unit integrally formed as a single unitary body having biasing means originally biasing independently movable surfaces adjacent compressible portion of each of fluid passages. In contrast, Van Steenderen requires multiple individual springs 82. Accordingly, claim 35, as amended, overcomes rejection.

VII. Rejection of Claims 36 and 39 under 35 USC 102(b) Based upon Drummond

Page 6 rejected claims 36 and 39 under 35 USC 102(b) Based upon Drummond et al. US Patent 3,818,688. Claim 39 is canceled. With respect to claim 36, page 6 further indicated that claim 37 would be allowable upon overcoming the rejection under 35 USC 112, first paragraph and including all of the limitation of the base claim and any intervening claims. Claim 37 is canceled in its limitations are incorporated into base claim 36. Accordingly, claim 36, as amended, is believed to overcome the rejection based upon Drummond.

VIII. Added Claims

With this response, Claim 41 is added. Page 6 of the Office Action indicated that claim 38 would be allowable if rewritten in independent form and rewritten so as to overcome the rejection under 35 USC 112, first paragraph. Claim 38 is rewritten in independent form as added claim 41 and includes all of the limitations of former dependent claim 36. Accordingly, added claim 41 is presented for consideration and allowance.

IX. Conclusion

After amending the claims as set forth above, claims 1-36, 38 and 40-41 are now pending in this application.

Atty. Dkt. No. 200311812-1

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 08-2025. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 08-2025. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 08-2025.

Respectfully submitted,

Date May 31, 2006

RATHE PATENT & IP LAW
Customer No. 22879
Telephone: (262) 478-9353
Facsimile: (262) 238-1469

By Todd A. Rathe

Todd A. Rathe
Attorney for Applicant
Registration No. 38,276

Design Tips for Rapid Injection Moulding

May Tip: Living with hinges

At Protomold we don't design parts - that's your job. But if you happen to be unfamiliar with the technique called "living hinges", this Design Tip may come in handy someday.

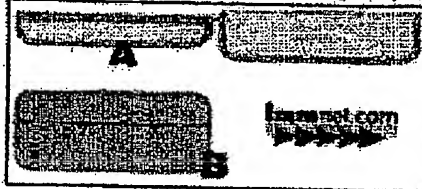


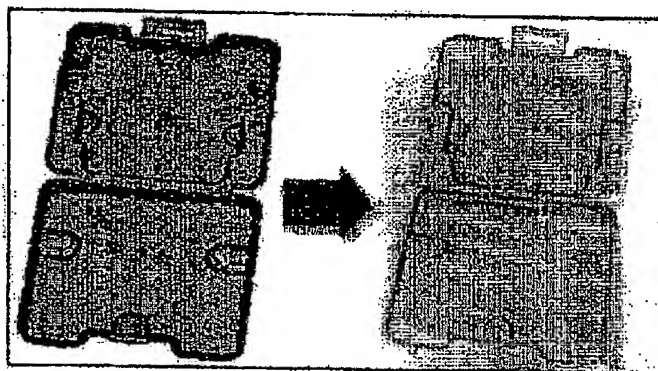
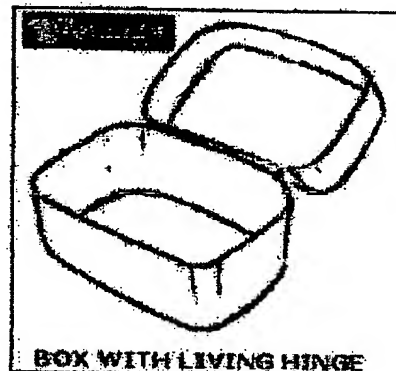
Figure 1A, 1B. Without a living hinge, this box would require two moulds, two moulding operations, and assembly.

As described in detail by Dr. Glenn Beall in his August 2002 Injection Moulding Magazine article, "By Design: Polypropylene part design, Part 2 - Living hinges", in the late 1950s it was discovered that below a certain thickness, polypropylene molecules oriented in the direction of flow. And repeated bending perpendicular to that orientation was possible without breakage due to the increased strength that resulted. The name "living hinge" was given to this technique and has been used ever since.

Living hinges are very useful in certain designs for injection moulded parts because you can combine two or three parts into one. And as noted on efunda.com (an excellent online engineering fundamentals resource) in a page dedicated specifically to living hinges, a well designed hinge in these materials can last for millions of cycles. Additional materials with somewhat less of a life expectancy are Nylon and Acetal.

Check out both of these excellent articles for additional technical design details and illustrations.

Here's a recent example designed by our customers and manufactured via Rapid Injection Moulding:



You can visit the [Protomold Design Guide](#) for other helpful Rapid Injection Moulding design information.

May Designer Survey: What sort of prototypes do you most often purchase?